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Problems in the Control of Melanoma of Skin, Rhode Island, 1987-1998

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In the United States, about 48,000 new cases of melanoma of the skin (melanoma) are diagnosed annually, and about 8,000 people die of the disease.[1] The five-year survival rate for melanoma diagnosed at all stages is about 89%, but cases that present as regional or distant tumors have five-year survival rates of 61% and 12%, respectively.[2] Age-adjusted melanoma incidence almost tripled between 1973, when national cancer incidence statistics were first collected, and 1998, the last year for which incidence data are currently available. Mortality also increased between 1973 and 1998, but less dramatically.[2] Melanoma incidence is largely confined to the white population in this country. Blacks so rarely develop melanomas that incidence rates cannot be calculated for most years.[2]

Methods. Data on newly diagnosed cases of malignant melanoma of the skin for Rhode Island residents, 1987-1998, were obtained from the Rhode Island Cancer Registry. Analogous data on deaths from malignant melanoma were obtained from the Office of Vital Records, Rhode Island Department of Health. Over 99% of the cases and deaths were attributed to whites; analysis was therefore restricted to whites. Age-specific incidence and mortality rates, by sex, were computed for the entire period, 1987-1998, by combining data on cases and deaths with intercensal estimates of the population of Rhode Island by age, sex, and race prepared by the United States Bureau of the Census. Age-specific rates were then combined with the United States Standard Population of 1970 to construct age-adjusted incidence and mortality rates by sex and by year of diagnosis or death. Use of the United States Standard Population of 1970 is the current convention for the calculation of cancer statistics in the United States.[2] Years of diagnosis or death were grouped to smooth the rates (1987-1990, 1991-1994, 1995-1998). The percentage of new cases diagnosed at each stage was also computed for these three time periods.

To facilitate comparison with the latest available national data on melanoma incidence and mortality, age-adjusted Rhode Island rates were also constructed for the 1994-1998 period, using the United States Standard Population of 1970. Comparable national data were obtained from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) system. The SEER system covers about 14% of the United States population, but that 14% has been carefully selected to allow the constuction of rates which are representative of the nation as a whole.[2]

To test the completeness of malignant melanoma case reporting to the Rhode Island Cancer Registry, an incidence-to-mortality rate ratio was computed from Rhode Island's age-adjusted melanoma incidence and mortality rates for 1994-1998, and compared with the analogous rate ratio computed from SEER rates for the same period. Use of the incidence-to-mortality rate ratio to evaluate completeness of case reporting is standard practice among central cancer registries in the United States.[3] The Rhode Island ratio (6.7) is nominally higher than the national ratio (6.4), indicating that the Rhode Island cases have not been grossly undercounted.

Results. Over the course of twelve years (1987-1998), 1692 newly diagnosed melanomas and 326 melanoma deaths were reported for white Rhode Island residents. The mean and median ages at diagnosis were both 61 years. The mean and median ages at death were 73 and 76 years, respectively.

In that time period (1987-1998), age-specific melanoma incidence and mortality rates were generally higher for males than females, with greater differentials observed in the upper age groups. (Figures 1 and 2) Age-adjusted melanoma incidence and mortality rates were also higher for males than females. In the period 1995-1998, for example, the age-adjusted melanoma incidence rate for males, 18.8 per 100,000, was 65% higher than the analogous rate for females, 11.4 per 100,000. In the same period, the age-adjusted melanoma mor-

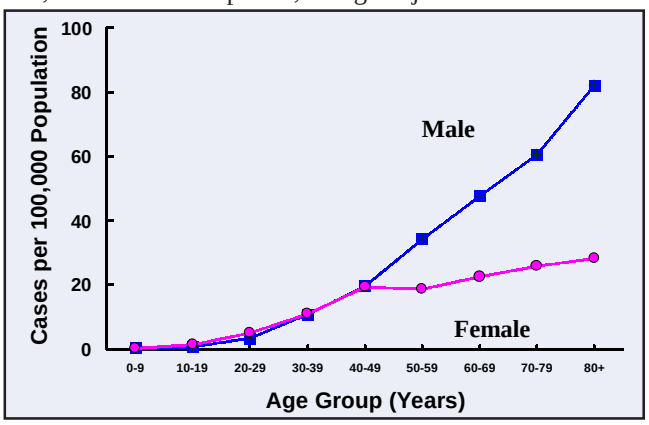

Figure 1. *Age-specific incidence of melanoma of skin, Rhode Island, whites, 1987-1998, by sex*

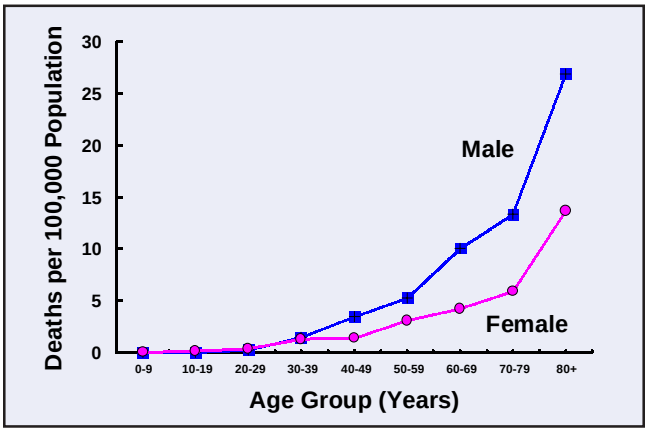

Figure 2. *Age-specific mortality of melanoma of skin, Rhode Island, whites, 1987-1998, by sex*

tality rate for males, 3.0 per 100,000, was 76% higher than the analogous rate for females, 1.7 per 100,000. Age-adjusted incidence increased for both males and females throughout the period of observation, as did age-adjusted mortality for females. For males, a recent increase in age-adjusted mortality followed an earlier decline. (Figures 3 and 4)

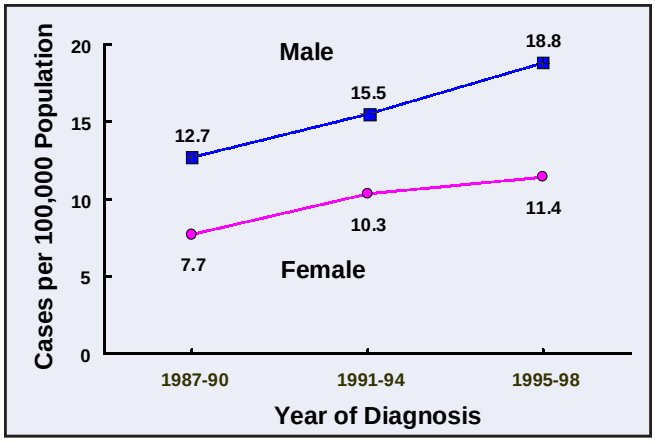

Figure 3. *Age-adjusted incidence of melanoma of skin, Rhode Island, whites, 1987-1998, by sex and time period*

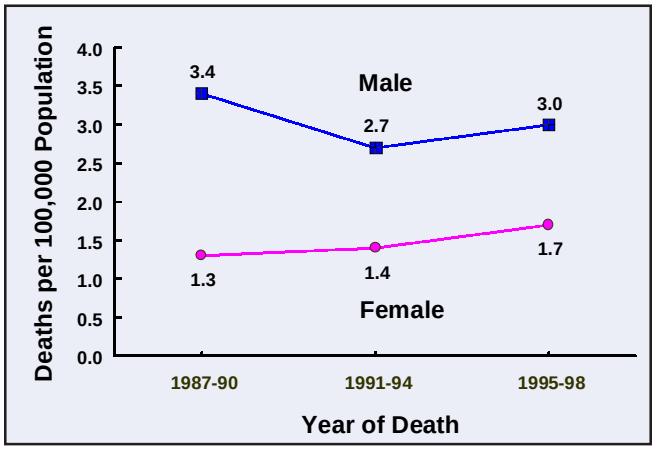

Figure 4. *Age-adjusted mortality of melanoma of skin, Rhode Island, whites, 1987-1998, by sex and time period*

During the five-year period 1994-1998, age-adjusted melanoma incidence and mortality rates for both sexes were lower in Rhode Island than in the United States as a whole. Among males, for example, the incidence rate was 17.9 per 100,000 in Rhode Island, versus 19.6 in the United States. The parallel rates for females were 11.3 and 13.5, respectively. The age-adjusted melanoma mortality rate for males was 2.8 per 100,000 in Rhode Island, versus 3.6 in the United States. For females, the age-adjusted melanoma mortality rate was 1.6 in Rhode Island, versus 1.7 in the United States as a whole.

Discussion. Common risk factors for melanoma of skin include sunlight exposure and sunburn, fair skin, mole characteristics (type and number), and family history. A relationship between melanoma mortality and latitude has been observed in the United States, which probably accounts for the differential observed between Rhode Island and the United States as a whole.[4]

The increase in melanoma incidence and mortality observed in Rhode Island and elsewhere in the United States is troubling. To date, control efforts (prevention, screening, and treatment) appear to be failing. We must increase our efforts to educate the public to protect themselves from melanoma by avoiding sunburn and excess sun exposure, and by seeking care for moles that are "persistently changed or changing".[4] Referring high-risk patients to dermatologists for regular check-ups is also a prudent control measure for this potentially deadly disease.[5]

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